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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,404	02/19/2002	Ryuji Sato	Q68583	2141

7590   09/06/2006

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EXAMINER
HENNING, MATTHEW T

ART UNIT	PAPER NUMBER
2131	

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/076,404	SATO, RYUJI
	Examiner	Art Unit	
	Matthew T. Henning	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *19 June 2006*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-14* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-14* is/are rejected.

7) ☒ Claim(s) *1-14* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

1   This action is in response to the communication filed on 6/19/2006.

2   **DETAILED ACTION**

3   *Continued Examination Under 37 CFR 1.114*

4

5   A request for continued examination under 37 CFR 1.114, including the fee set forth in

6   37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

7   eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

8   has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

9   37 CFR 1.114. Applicant's submission filed on 6/19/2006 has been entered.

10

11   *Response to Arguments*

12   Applicant's arguments filed 6/19/2006 have been fully considered but they are not

13   persuasive.

14   Regarding applicant's remark that the amendments are "non-narrowing", the examiner

15   disagrees. However, if the applicant wishes that the added limitations be given no weight, the

16   examiner maintains all rejections and objections previously made for the reasons previously

17   presented. Below, the examiner will treat the claims as amended for the sake of furthering

18   prosecution.

19   Regarding applicant's argument that Glover did not disclose the device driver decrypting

20   the encrypted program code portion, the examiner does not find the argument persuasive. Glover

21   clearly shows in Fig. 7 that the "unwrap procedure", "device driver", and "hidden application"

22   are all part of one "computer program file". If this were not the case, why would they be placed

1   together inside box 126 which is labeled "computer program file"? Glover also clearly shows

2   that the device driver "performs" the decryption. This can be seen in Fig. 6 Step 116 which

3   describes the operation of the device driver, as well as in Col. 11 Paragraph 2, especially lines

4   23-26. As such the examiner does not find the argument persuasive.

5   All objections and rejections not set forth below have been withdrawn.

6   Claims 1-14 have been examined.

7   *Claim Objections*

8   Claims 1-14 are objected to for the following reasons:

9   The independent claims recite that encryption and decryption are performed by

10   the device driver. This is not technically correct, as the device driver is simply program data,

11   and it is the processor executing the driver that is actually performing the encryption and

12   decryption. As such, the claims are objected to.

13   *Claim Rejections - 35 USC § 102*

14   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

15   basis for the rejections under this section made in this Office action:

16   *A person shall be entitled to a patent unless –*

17   *(b) the invention was patented or described in a printed publication in this or a foreign*
18   *country or in public use or on sale in this country, more than one year prior to the date of*
19   *application for patent in the United States.*
20
21   Claims 1-2, and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Glover

22   (US Patent Number 6,052,780).

23   Regarding claim 1, Glover disclosed a method for operating a device driver (See Glover

24   Abstract and Col. 9 Lines 7-9), comprising the steps of: providing a device driver comprising an

1   encrypted program code portion of a main process thereof (See Glover Col. 9 Lines 25-35 hidden

2   information); decrypting the encrypted program code portion in an initialization process of said

3   device driver (See Glover Col. 9 Lines 25-35), wherein the decrypting is performed by said

4   device driver and the encrypted program code portion to be decrypted is in said device driver's

5   own program (See Glover Figs. 6-7, and Col. 11 Paragraph 2); executing the decrypted program

6   code portion (See Glover Col. 11 Lines 3-5) and re-encrypting the executed decrypted program

7   code portion in an end process of the device driver, in which said device driver is released,

8   wherein the re-encrypting is performed by the device driver (See Glover Col. 10 Lines 45-47 and

9   Col. 22 Lines 32-36).

10   Claim 2 is rejected for the same reasons as claim 1 above and further because Glover

11   disclosed initializing the device driver (hidden information) before decrypting the portions of

12   code (See Glover Col. 9 Lines 16-19 and Col. 10 Lines 19-27).

13   Regarding claims 4-5, Glover disclosed extracting a numeric value from an application;

14   and a creating key, corresponding to the numeric value, for decrypting and re-encrypting the

15   program code portion in said decrypting and re-encrypting of the program code portion steps

16   (See Glover Col. 21 Lines 32-38).

17   *Claim Rejections - 35 USC § 103*

18   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

19   obviousness rejections set forth in this Office action:

20   *A patent may not be obtained though the invention is not identically disclosed or*
21   *described as set forth in section 102 of this title, if the differences between the subject matter*
22   *sought to be patented and the prior art are such that the subject matter as a whole would have*
23   *been obvious at the time the invention was made to a person having ordinary skill in the art to*
24   *which said subject matter pertains. Patentability shall not be negatived by the manner in which*
25   *the invention was made.*

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glover, and further in view of Schneier ("Applied Cryptography, Second Edition").

Glover disclosed encrypting a program code portion, decrypting the program code portion, executing the decrypted program code portion, and re-encrypting the program code portion after processing was complete (See the rejection of claim 1 above and Col. 9 Lines 22-24 and Lines 33-35), but failed to disclose encrypting and decrypting with two different keys.

Schneier teaches that double encryption using two different keys provides two times the security of single encryption (See Schneier Section 15.1).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Schneier in the encryption, decryption, re-encryption system of Glover, by encrypting the portion of code with one key and encrypting the result with a second key and decrypting in a reverse manner. This would have been obvious because the ordinary person skilled in the art at the time of invention would have been motivated to increase the security of the encrypted program.

Claims 6-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Glover as applied to claims 1-2 above, and further in view of McManis (US Patent Number 5.757.914).

Regarding claims 6-7, Glover disclosed the device driver communicating with an application (See Glover Col. 10 Lines 34-47), but failed to disclose authentication between the two.

McManis teaches a method for protecting two communicating applications in which before process A calls process B, A authenticates B by verifying the integrity of B, and before B

1   responds to A, B verifies the integrity of A, and in both cases if the verification fails execution is

2   aborted (See McManis Col. 3 Line 53- Col. 6 Line 9).

3   It would have been obvious to the ordinary person skilled in the art at the time of

4   invention to employ the teachings of McManis in the dynamically loaded device driver by

5   mutually authenticating the calling application and the device driver by integrity verification

6   when a request is made by the application to the device driver. This would have been obvious

7   because the ordinary person skilled in the art would have been motivated to protect the use of the

8   application as well as the use of the dynamically loaded device driver.

9   Regarding claims 8-9, the combination of Glover and McManis disclosed providing an

10   application, which requests the device driver (See Glover Col. 11 Lines 6-11), utilizing the

11   application to detect whether or not the program code portion of said device driver has been

12   forged before supplying output data to said device driver, and when the program code portion of

13   said device driver has been forged, the application stops outputting the output data to hardware,

14   and utilizing the device driver to detect whether or not a program code portion of the application

15   has been forged before supplying input data to the application, and when the program code

16   portion of the application has been forged, said device driver stops outputting the input data to

17   the application (See McManis. Fig 2 and related text).

18   Regarding claims 10-11, the combination of Glover and McManis disclosed that said

19   device driver does not decrypt encrypted data of the application, and wherein only when the

20   program code portion of said device driver has not been forged, the application decrypts the

21   encrypted data and provides the decrypted data as the output data to said device driver (See

22   McManis Col. 5 Lines 50-67).

1   Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glover as

2   applied to claims 1 and 2 above, and further in view of Cabrera et al. (US Patent Number

3   5,978,815) hereinafter referred to as Cabrera.

4   Glover disclosed a device driver being executed (See Glover Col. 9 Lines 33-35 and Col.

5   10 Lines 43-47), but failed to disclose the device driver communicating between an application

6   arranged at a user level and hardware arranged at a privilege level.

7   Cabrera teaches that device drivers are used to communicate between hardware and

8   software and that the software typically runs in a user mode and the driver operates at the

9   privilege level (See Cabrera Col. 7 Paragraph 2).

10   It would have been obvious to the ordinary person skilled in the art at the time of

11   invention to employ the teachings of Cabrera in the system for securing device drivers of Glover

12   by having the device driver communicate between a user mode application and hardware

13   arranged at the privilege level. This would have been obvious because the ordinary person

14   skilled in the art would have been motivated to allow the driver to perform many functions that

15   would not be possible from user mode.

16   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glover and

17   McManis as applied to claim 3 above, and further in view of Cabrera.

18   Glover and McManis disclosed a device driver being executed (See Glover Col. 9 Lines

19   33-35 and Col. 10 Lines 43-47), but failed to disclose the device driver communicating between

20   an application arranged at a user level and hardware arranged at a privilege level.

1   Cabrera teaches that device drivers are used to communicate between hardware and

2   software and that the software typically runs in a user mode and the driver operates at the

3   privilege level (See Cabrera Col. 7 Paragraph 2).

4   It would have been obvious to the ordinary person skilled in the art at the time of

5   invention to employ the teachings of Cabrera in the system for securing device drivers of Glover

6   and McManis by having the device driver communicate between a user mode application and

7   hardware arranged at the privilege level. This would have been obvious because the ordinary

8   person skilled in the art would have been motivated to allow the driver to perform many

9   functions that would not be possible from user mode.

10   *Conclusion*

11   Claims 1-14 have been rejected.

12   The prior art made of record and not relied upon is considered pertinent to applicant's

13   disclosure.

14   Any inquiry concerning this communication or earlier communications from the

15   examiner should be directed to Matthew T. Henning whose telephone number is (571) 272-3790.

16   The examiner can normally be reached on M-F 8-4.

17   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

18   supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the

19   organization where this application or proceeding is assigned is 571-273-8300.

1   Information regarding the status of an application may be obtained from the Patent

2   Application Information Retrieval (PAIR) system. Status information for published applications

3   may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

4   applications is available through Private PAIR only. For more information about the PAIR

5   system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

6   system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

7   like assistance from a USPTO Customer Service Representative or access to the automated

8   information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

9
10
11   Matthew Henning
12   Assistant Examiner
13   Art Unit 2131
14   9/5/2006

CHRISTOPHER REVAK
PRIMARY EXAMINER

9/4/06